

AMENDMENTS TO THE SPECIFICATION:

Please delete the paragraph on page 13, line 15, to page 14, line 7 and replace it with the following amended paragraph:

The disulfide problem can be described as follows:
The method relies on the formation and breaking of S-S bonds during the removal of fluorophore. Consider the following series of incorporations and cleavage reactions where C (or A, G, U, T) indicate a non-modified deoxynucleoside triphosphate (and N indicates any of these bases), C^{-SS-label} (or A^{-SS-label}, G^{-SS-label}, U^{-SS-label}) indicates a modified deoxynucleoside triphosphate (label-SS-dCTP) and C^{-SH} (or A^{-SH}, G^{-SH}, U^{-SH}) indicates a modified deoxynucleoside that has been cleaved with a reducing reagent, yielding HS-dCp (or HS-dAp, HS-dGp, HS-dUp)).

First incorporation:

Primer NNNNNN-pC^{-SS-label}
Template NNNNNN--Gp- Tp -Cp -Tp -Gp - NNNNNNNNNNNNNN (SEQ ID
NO: 1)

First cleavage:

Primer NNNNNN-pC^{-SH}
Template NNNNNN -Gp- Tp -Cp -Tp -Gp - NNNNNNNNNNNNNN (SEQ ID
NO: 1)

Second incorporation:

Primer NNNNNN-pC^{-SH}-pA^{-SS-label}
Template NNNNNN--Gp- -Tp -Cp -Tp -Gp - NNNNNNNNNNNNNN (SEQ ID
NO: 1)

Please delete the paragraph on page 24, lines 2-19 and replace it with the following amended paragraph:

Example 1:

Capping thiol groups for protecting neighboring Cy5-SS-dCTP incorporated from premature cleavage.

The oligonucleotide templates E3PN10b and E3PN22b, biotinylated at their 5' ends were annealed to a primer, NUSPT-Fluorescein as shown. The bases to be incorporated are indicated in **bold** with the two positions for C incorporations indicated in **underlined bold**.

E3PN10b

Fluorescein-GTAAAACGACGGCCAGT**CTGAAC** (SEQ ID NO: 2)
CAACATTTTGCTGCCGGTCAGACTTGCTTAAGGTCG-biotin (SEQ ID NO: 3)

E3PN22b

Fluorescein-GTAAAACGACGGCCAGT**CTC** (SEQ ID NO: 4)
CAACATTTTGCTGCCGGTCAGAGCTTAAGGTCG-biotin (SEQ ID NO: 5)

Please delete the paragraph on page 26, line 14, to page 27, line 4 and replace it with the following amended paragraph:

Example 2:

Achieving a linear relationship between fluorescence signal and number of bases incorporated in homopolymer stretches with Cy5-SS-dCTP/dCTP mixes

E3PN4B

Fluorescein-GTAAAACGACGGCCAGTTAC (SEQ ID NO: 6)
CAACATTTTGCTGCCGGTCATGCTGCTTAAGGTCG-biotin (SEQ ID NO: 7)

E3PN5B

Fluorescein-GTAAAACGACGGCCAGTACC (SEQ ID NO: 8)
CAACATTTTGCTGCCGGTCATGGCTGCTTAAGGTCG-biotin (SEQ ID NO: 9)

E3PN6B

Fluorescein-GTAAAACGACGGCCAGTACCC (SEQ ID NO: 10)
CAACATTTTGCTGCCGGTCATGGGCTGCTTAAGGTCG-biotin (SEQ ID NO: 11)

E3PN28B

Fluorescein-GTAAAACGACGGCCAGTACCCC (SEQ ID NO: 12)
CAACATTTTGCTGCCGGTCATGGGGCTGCTTAAGGTCG-biotin (SEQ ID NO: 13)

Please delete the paragraph on page 28, lines 23-30 and replace it with the following amended paragraph:

Example 3:

Example: Sequencing, using "directed dispensation", of the
oligonucleotide E3PN19b

NUSPT: fluorescein-GTAAAACGACGGCCAGT**UCAGACGAA** (SEQ ID NO: 14)
E3PN19b CAACATTTTGCTGCCGGTCAAGTCTGCTTAAGGTCG-biotin (SEQ
ID NO: 15)

Please delete the paragraph on page 30, line 18, to page 31, line 7 and replace it with the following amended paragraph:

Example 5: Determining the selectivity of Klenow exo- DNA
polymerase for labeled/unlabelled nucleotides

E3PN10B

Fluorescein-GTAAAACGACGGCCAGT**C** (SEQ ID NO: 16)
CAACATTTTGCTGCCGGTCAGACTTGCTTAAGGTCG-biotin (SEQ
ID NO: 3)

E3PN4B

Fluorescein-GTAAAACGACGGCCAGT**A** (SEQ ID NO: 17)
CAACATTTTGCTGCCGGTCATGCTTGCTTAAGGTCG-biotin (SEQ ID
NO: 18)

E3PN12b

Fluorescein-GTAAACGACGGCCAGTG (SEQ ID NO: 19)

CAACATTTTGCTGCCGGTCACTACTGCTTAAGGTCG-biotin
(SEQ ID NO: 20)

E3PN18b

Fluorescein-GTAAACGACGGCCAGTU (SEQ ID NO: 21)

CAACATTTTGCTGCCGGTCAACGCTGCTTAAGGTCG-biotin (SEQ
ID NO: 22)

Please delete the paragraph on page 32, lines 20-30 and replace it
with the following amended paragraph:

Example 6: Determining the relationship between
fluorescence signal and number of bases incorporated in
homopolymer stretches with Cy5-SS-dGTP/dGTP mixes
according to WO 00/53812

E3PN13b: 5'-GCTGGAATTCGTATGCACTGGCCGTCGTTTTACAAC-3' (SEQ ID
NO: 23)

E3PN24b: 5'-GCTGGAATTCGTATGCCACTGGCCGTCGTTTTACAAC-3' (SEQ ID
NO: 24)

E3PN25b: 5'-GCTGGAATTCGTATGCCCACTGGCCGTCGTTTTACAAC-3' (SEQ ID
NO: 25)

NUSPT-FL: 5'-Fluorescein-GTA AAA CGA CGG CCA GT-3' (SEQ ID
NO: 26)